

## Interview Summary

Application No.

09/432,272

Applicant(s)

SARUTA ET AL.

Examiner

Michael P Nghiem

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All participants (applicant, applicant's representative, PTO personnel):

(1) Michael P Nghiem.

(3) \_\_\_\_\_

(2) David Schaeffer.

(4) \_\_\_\_\_

Date of Interview: 04 December 2003.

Type: a) ☐ Telephonic b) ☐ Video Conference  
c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☒ Yes e) ☐ No.

If Yes, brief description: ink jet cartridge.

Claim(s) discussed: 1, 15, 35, 55, 72, 97, 98, 100, 108 and 114.

Identification of prior art discussed: Murray (US 5,610,635), Gorelick (US 4,739,352).

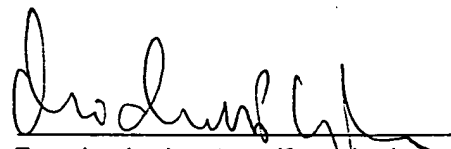
Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Formal matters were discussed. Further, amending claims 1, 15, 35, 55, 72, 97, 98, 100, and 114, to recite that the ink quantity information is stored first before storing other information would overcome the teachings of Murray and Gorelick.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

  
Examiner's signature, if required

## DETAILED ACTION

The Amendment filed on September 15, 2003 has been acknowledged.

### *Request for Continued Examination*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 9, 2003 has been entered.

### *Claim Objections*

2. Claims 1, 15, 35, 55, 72, 100, and 108 are objected to because of the following informalities:

- claims 1, 15, 35, 55, 72, 100, 108, "... accessing for **rewriting** any other area ... (where another type of information is stored)" should be -- ... accessing any other area ... --. It is noted that "any other area ... where another type of information is stored" is shown as first storage area (650) (Fig. 8) which is only readable by the printer.

See p. 72  
Fig. 22

Fig 22  
(p. 72)

- claim 35, "other information" (line 7) and "the other pieces of specific information" (line 9) should be deleted. In the write-able storage area, i.e., storage area (660), there is no other information stored besides data on the remaining quantity of ink (Fig. 8).

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 15, 16, 18-20, 23, 35, 37, 55, 56, 72-77, 94-96, 98, 100, 102, 104-109, and 111-113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al. (US 5,610,635) in view of Gorelick et al. (US 4,739,352).

Murray et al. discloses the following claimed features of the invention:

- an inkjet printer (Fig. 1) and a method of writing plural pieces of specific information into an ink cartridge (52) configured to be detachably attached to the printer (Fig. 1), said ink cartridge comprising:
  - an ink reservoir (reservoir of 52) in which an ink used for printing is kept;

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- a storage unit (48) storing specific information in a readable, writable, and non-volatile manner (RAM, column 6, lines 53-56), wherein the specific information comprises an ink quantity-relating information relating to a quantity of ink kept in said ink reservoir (Abstract, lines 12-13),

- wherein the storage unit is sequentially accessed in synchronism with a clock signal (via clock of 91), and has an ink quantity information storage area (storage area of 48) storing the ink quantity-relating information (data relating to initial ink and ink remaining volumes, column 9, lines 51-52, 57-59), and wherein the ink quantity information storage area is located at a specific area that is the area located within the storage unit (ink remaining data stored in 48, column 10, lines 6-7) that is accessed for rewriting by said printer first before accessing for rewriting any other area within the sequential access storage unit where another type of information is stored (ink remaining volume has to be updated and accessed first before a large print job is started, column 9, lines 51-65);

- said storage unit having a first storage area (storage area in 48), in which a plurality of read only information is stored (storage area of 48 storing initial volume of ink), and a second storage area, which is arranged at a location accessed for rewriting prior to the first storage area (storage area of 48 storing data relating to remaining ink quantity);

- the rewritable information stored in the second storage area comprises a piece of information on a remaining quantity of ink in said ink reservoir, wherein the piece of

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information on the remaining quantity of ink is calculated by said printer from an amount of ink consumption used for printing (column 9, lines 52-57);

- the second storage area has at least two memory divisions, into which a latest piece of information on the remaining quantity of ink is written sequentially (column 10, lines 1-7);

- said storage unit is an EEPROM (Abstract, line 14);

- rewriting the ink quantity-relating information into said storage element (remaining ink related data is updated in 48);

- an address counter (86) that carries out either one of a count-up operation (Fig. 5);

- said storage element stores format information relating to items of information stored therein (i.e. ink type, column 10, lines 1-16);

- a maximum amount of the first data that the first storage area can store is equal to a maximum amount of the second data that the second storage area can store (ink type vs. ink color);

- at least one of the read-only data and the data comprises a plurality of data records, and the data records are sequentially arranged (column 10, lines 1-7);

- a first said data record has a first size and a second said data record has a second size, and the first and second sizes are different (ink type vs. ink delivered, column 10, lines 1-7).

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Even though Murray et al. does not disclose a sequential access storage unit for storing specific information, it is noted that the random access memory (RAM, column 6, lines 53-56), via software control, can be accessed sequentially if desired.

Gorelick et al. discloses that a random access memory of an imaging system can be accessed sequentially (Abstract, lines 18-21) for the purpose of controlling the sequence of an array of imaging elements (column 2, lines 24-25).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Murray et al. with sequentially accessing memory as disclosed by Gorelick et al. for the purpose of controlling an array of imaging elements.

Claim 114 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al. (US 5,610,635).

Murray et al. further discloses reading the second data without reading the first data (i.e. remaining data in RAM is accessed one data at a time).

Even though Murray et al. as modified does not disclose that the second address is closer to a beginning of the storage device than the first address, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to

readdress the RAM storage areas of Murray et al., as a matter of preference, for the purpose of storing printing related data.

Claim 97 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al. in view of Gorelick et al. as applied to claim 1 above and further in view of the following.

Even though Murray et al. as modified does not disclose that the printer accesses the ink quantity information storage area after accessing another portion of the storage unit, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to access, during ink cartridge replacement, the ink type data (column 10, line 3) before accessing the amount of ink remaining data (column 10, lines 6-7) for the purpose of ensuring that a proper ink cartridge is inserted.

Claim 101 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al. in view of Gorelick et al. as applied to claim 100 above and further in view of the following.

Even though Murray et al. as modified does not disclose that the second storage area is closer to a start address for being accessed by said printer in the storage device than the first storage area, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to readdress the RAM storage areas of Murray et al., as a matter of preference, for the purpose of storing printing related data.

***Allowable Subject Matter***

4. Claims 2, 3, 5-9, 11-14, 17, 36, 38-44, 57, 58, 99, 103, and 110 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Reasons For Allowance***

5. The combination or method as claimed wherein said ink reservoir comprises a specific number of ink chambers corresponding to a number of different inks used for printing (claims 2, 17, 57) or the ink quantity information storage area is a first storage area located at a head of the plurality of storage areas included in said storage unit (claim 11) or the ink quantity information storage area is a last storage area located at an end of the storage areas included in said storage unit (claim 12) or the writing operation of the ink quantity-relating information into said storage element is carried out at a time of replacement of said ink cartridge and/or at a power-off time of said printer (claim 36) or arranging the plural pieces of specific information in a certain sequence that allows the pieces of information relating to the quantities of the at least three different color inks to be located in a storage capacity of at least three bytes from a head (claims 38, 39) or the second memory area is located at a first half of an entire memory space of the non-volatile sequential access memory (claim 99) or the read-only



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data reflects a serial number of the ink cartridge and an indication as to whether the ink cartridge is new or recycled (claims 103, 110) is not disclosed, suggested, or made obvious by the prior art of record.

***Response to Arguments***

6. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (703) 306-3445. The examiner can normally be reached on M-H from 6:30AM – 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached at (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Michael Nghiem

October 21, 2003